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ABSTRACT

Faculty activities having a scholarly or professional quality are examined. Such scholarly work is defined as activities in professional practice that use, to some degree, doctoral research training, applying professional research competencies: this is seen to encompass much more than publication efforts. A list of 80 related activities was developed and rated, by the extent to which doctoral training is used in each, by a panel of professionals. The activities were further categorized into subcategories and into two "domains": External Disciplinary-Colleague (EDC) and Institutional-Local-Community (ILC). It was hypothesized that faculty with more publications perform EDC activities more than lower-publication faculty, and that lower-publication faculty perform more ILC activities. A sample of 335 Ph.D. faculty in either chemistry or psychology at 44 selective institutions were surveyed by questionnaire. The first hypothesis was borne out, but the second was not: high-publishing faculty also had higher ILC scores. It is concluded that publication rates reflect not only research efforts but general energy level of the faculty member: however, they also omit and thereby obscure significant areas of professional behavior, and need to be brought into perspective. (MSE)

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FACULTY USES OF DOCTORAL TRAINING: CONSIDERATION OF A TECHNIQUE FOR THE DIFFERENTIATION OF FACULTY BEHAVIOR

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FACULTY USES OF DOCTORAL TRAINING: CONSIDERATION OF A TECHNIQUE FOR THE DIFFERENTIATION OF FACULTY BEHAVIOR

John Braxton, William Toombs

INTRODUCTION: Teaching and research have been acknowledged as the core activities of the academic profession (Parsons & Platt, 1968). It is, however, a partnership that is filled with inequalities. Research is more highly valued for, as Ladd (1979) observed; "Whether or not they themselves do research or want to engage in original scholarship, most faculty seem to believe that the most meritorious behavior of an academic man or woman is the performance of significant research." Moreover, the assessment of individual faculty performance in research has focused on an evaluation of publications in the form of books, monographs, and refereed journals (Neuman, 1977). Publications are viewed as the most palpable evidence of research activity and are amenable to multiple interpretation. In addition to publication counts and the prestige of the publisher second order effects in the form of citations and reprintings can be taken as indications of quality. Altogether the use of publications as a primary evidence of faculty performance fits well with the contention of Etzioni and Lehman (1967) that assessment tends to be based on those attributes most easily measured.

Publication, however, is performed by relatively few faculty with almost 90 percent of the research articles in journals coming from about 10 percent of the college and university faculty members (Berelson, 1960, Wilson, 1967, Ladd, Lipset Survey, 1977). Most recently Ladd (1979) found that "just under one fourth of American professors have published extensively . . . construed as twenty or more articles and/or three or more monographs." Furthermore, one body of inquiry demonstrates that publication is subject to numerous influences varying from the quality of the doctoral department (Crane 1965) to particular

organizational features (Pelz and Andrews 1966). The accumulated emphasis on one kind of activity, research, the great attention given to one manifestation of it, publication, and the narrow focus of the reward structure have produced a deep and serious rift within the academic profession. Ladd (1979) has laid it out succinctly; "An ascendant model in academe, positing what faculty *should be doing* is seriously out of touch with what they *actually do* and *want to do*." Still other manifestations of this schizoid condition are found in debates about the suitability of Ph.D. training as preparation for teaching (McGrath 1959, Mayhew, Ford, 1974) the fairness of review for promotion and tenure, and the value of the outputs from compulsory research. This dangerous dichotomy with all its frustrating inequities derives from a simplistic logic that says, "faculty are trained at the Ph.D. level in the skills, attitudes, and values of research therefore the best measure of how well that training is applied must be the research they produce."

We submit here that research training is in fact useful in a number of ways and, therefore, measureable across a much wider range of behaviors. Blackburn (1974) has asserted that the 90 percent of faculty who have no publications to speak of are neither unscholarly nor unproductive. The process of academic practice involves many activities that are poorly reflected, sometimes not at all, by a concentration on outputs. An essential weakness of publications as an indicator of faculty performance is that they are only an output measure. If one begins with research training at the doctoral level and asks "In how many ways can this skill and knowledge be used?" then perhaps some limitations of the current views of faculty work patterns will be removed.

PROCEDURE: This paper presents a line of analysis, and a technique for differentiating and weighting a wide range of faculty activities. First, the inventory of typical faculty behaviors reported in the literature and observed in practice was examined to identify those best designated as professional activities. Second, this behavior set of 80 items was submitted to a panel of expert judges who rated them in terms of the degree to which doctoral training was used in their execution. The items were then ordered into two domains and ten categories to give a more workable weighted performance inventory. Third, through the cooperation of a sample of faculty members in two disciplines at 40 liberal arts colleges who reported the frequency w th which they performed these key activities it was possible to validate several aspects of the inventory. Because publications were also reported it was also possible to test some hypotheses that captured conventional wisdom on faculty activity in a research design. Finally, the weighted item pool is offered in a form that will allow applications to other settings. (Appendix A)

A surprisingly large number of diverse activities have been identified with the faculty role. Bess (1976) in one of the most complete analyses, listed 320 discrete activities which college and university faculty perform. Each of the activities was assigned to one of five categories: 1) graduate education; 2) undergraduate education; 3) research and professional activities; 4) community service activities, and; 5) administrative service activities. Hagstrom (1965) in his work on the sociology of science identified those activities involving professional communication with colleagues. The following channels were observed 1) published articles and books, papers read at professional association meetings; 2) contacts with colleagues made at professional meetings; 3) informal contact with colleagues at different institutions,

correspondence, visits, etc.; 4) informal contact with departmental colleagues; 5) contact with former and current graduate students; 6) contacts with members of other disciplines. The list of behaviors can be extended further by examination of the pragmatic literature on faculty evaluation. Miller (1974) cited nine areas to be considered in evaluating performance: "classroom teaching, advising, faculty service and relations, management, performing and visual arts, professional services, publications, public service, and research." Centra (1977) reviewed some of the previous work on faculty performance then added his own data on the current views of department heads. While there was a trend toward more use of student ratings in recent years the whole sector concerned with evaluation of teaching and institutional service rests on the shifting sands of a chairman's judgment and colleague's opinions.

The topic of study here is not all faculty activity but only those which have a scholarly or professional quality. The contention is that such a group includes much more than publication. Therefore, the following definition of scholarly work was applied: scholarly work is composed of activities in professional practice which utilize to some degree doctoral research training in their performance. Put in different words, the application of research-based competencies, which are developed through the doctoral socialization process, to a particular professional activity makes the activity itself a form of scholarly or research work.

The logic underpining this definition is given greater clarity and specificity by a delineation of research-based competencies developed through doctoral research training. It is inferred that the following competencies are acquiried through the doctoral socialization process (Merton, 1957; Hagstrom, 1965; Rosen and Bates, 1967; Jencks and Riesman, 1968, Toombs, 1974; Cole and Cole, 1973; and Reskin, 1979): (1) the ability to identify, analyze and conceptualize topics and problems of an academic discipline; (2) the

ability to synthesize and interrelate facts and generalizations; (3) the ability to read and understand the literature of an academic discipline; (4) the ability to review, organize and criticize the literature of an academic discipline; (5) the ability to conceptualize and design a research study; (6) the ability to evaluate research studies and their findings; (7) the ability to use research findings and the methods of a discipline; (8) the ability to participate in informal communication networks among colleagues in an academic discipline; and (9) the ability to participate in the activities of professional disciplinary associations. Thus, it is evident that the application of such research-based competencies to a given professional task makes that activity itself a form of scholarly work.

Using this definition a list of 80 activities was developed. This behavior set was submitted to a panel of 10 nationally recognized scholars who have studied the academic profession or graduate education. Each of these judges assessed, on a scale of zero to ten, the extent to which doctoral research training is used in the performance of each activity. Both content validation and scaling were accomplished through a single procedure applying the Thrustone method of attitude scale construction to a set of behaviors (Edwards, 1957). Each judge sorted each activity (printed on cards) into 11 piles representing a scoring of zero to ten. A high degree of interjudge reliability was achieved and a Hoyt reliability coefficient of $r=.83$ was obtained. Weights for each activity were derived from the median rating for that activity made by all the judges.

To enable a richer interpretation and more detailed analysis the list of items, now weighted by the degree to which they involve an application of research training, were differentiated into two domains with five subcategories under each. Two quite different domains of practice are consistently recognized

in the literature albeit under different labels (Gouldner, 1957; Babchuk and Bates, 1962; McGee, 1971; Light, 1974; Toombs, 1975). Activity in the first domain is well legitimized, thoroughly recognized and is seen as having an integrated value structure which is embodied in an emphasis upon research, disciplinary involvement and commitment as well as a universalistic set of interests, attitudes and views (Parsons and Platt, 1973; Light, 1974). The system of beliefs also has a set of norms and values associated with scholarly performance (Merton, 1973). Because of the external orientation of activity, the importance of disciplinary standards, and emphasis on colleague relationships this domain has been labeled as EDC activities, External Disciplinary-Colleague Activities.

The second domain, labeled I.L.C. activities for Institutional-Local-Community, is not so clearly recognized nor is it perceived as having an integrated value structure. This domain includes activities generally associated with day to day academic work such as teaching, institutional activities, service to local interests and involvement with the lay public. As such these are viewed as activities done for the institution or the public (Light, 1974).

Two "scale of scales" were used to capture the performance of activities in the EDC Domain and in the I.L.C. Domain. Each of these scales was composed of five categories of activities. The categories, and parenthesized (weights) classified under the Scale of External-Disciplinary-Colleague (EDC) Activities were: Extramural Lectures (4.9); Ancillary Disciplinary Writings (6.5); Disciplinary Readings (7.0); Informal Communications with Colleagues (8.6); and Disciplinary Association Activities (8.7). Subsumed under the scale of Institutional-Local-Community (ILC) Activities were the following five categories: Public Talks and Lectures (2.5); Institutional-Departmental Activities (5.4); Course Content and Activities (5.3); Public Service

Activities (6.3) and Public Disciplinary Writings (6.6). Specific activity items were included in each of the five categories of the two scales which, in turn, correspond to the two domains of academic practice.

With the basic item pool now classified into two domains that reflect distinctions in professional practice the question arises as to the independence of the two constructs. The average rating or weight for the disciplinary (EDC) domain was 7.7 while the average of 5.2 was obtained for the institutional (I.L.C.) domain. A test for the independence of the two domains yielded values of $t_{69} = 5.39$, $p \leq .001$.

Thus, analysis indicated that activities within both domains utilize to some degree doctoral research training in their performance. A few items were combined at the suggestion of the judges but they did not recommend deletion of any. Put in different words, there is a range of scholarly or research-based activities within both domains of practice even though the larger distinction between disciplinary and institutional domains holds up.

The relationship between doctoral research preparation and two domains of professional practice had now been described in scalar form. Testing the scale with a group of active practitioners would not only aid with the validation of the scale, it would also afford an opportunity to examine the widespread belief that publications are a discrete measure of research application.

In addition to the belief that these domains are distinctly different, the Disciplinary domain (EDC) is valued above the Institutional domain (ILC) (Merton, 1973). The value placed upon the Disciplinary domain is manifested in the thrust of the doctoral socialization process toward research and scholarship in an academic discipline (Bates and Rosen, 1967, Hagstrom, 1965). In comparison the Institutional domain is almost neglected during doctoral study. Put in different words, the activities of Institutional domain are

learned on the job as a craft rather than by instruction as an integral part of doctoral study (Jencks and Riesman, 1968). The relationship between these discrete domains is also viewed as being mutually exclusive or ipsative. In other words if a person is highly involved in one domain, then they are expected to have a low level of involvement in the other domain. (Gouldner 1957; Blau, 1973).

Moreover, the use of publications as a proxy measure of scholarly or research performance is encouraged by the belief that the two domains are dichotomous, as well as by the ipsative or mutually exclusive relationship between the two domains.

From this set of propositions, the following two general hypotheses were derived.

Hypothesis One: Faculty of high publication productivity (career and current) perform to a greater extent than faculty of low publication productivity (career and current) Disciplinary domain activities (high EDC scores) which utilize doctoral research training.

Hypothesis Two: Faculty of low publication productivity (career and current) perform a greater extent than faculty of high publication productivity (career and current) Institutional domain activities (High ILC Scores) which utilize doctoral research training.

DATA SOURCE: A survey instrument operationalized the hypotheses of this study by asking faculty about the frequency with which they engaged in the scaled activities with some background information. The protocol was mailed to a sample of 335 Ph.D. faculty holding an academic appointment in either chemistry or psychology at 44 randomly selected Liberal Arts Colleges--Selectivity I (Carnegie Classification of Institutions, 1972).

A total of 187 useable survey forms were returned after three follow-up mailing waves. With the subtraction of respondents not meeting sampling criteria,

nondeliverable surveys, deceased individuals and retired individuals, a response rate of 63 percent was realized.

Analyses of variances by mailing waves to non-respondents indicated no bias among respondents in the dependent measures of this study. This method for the determination of the representativeness or degree of bias in a sample is consistent with procedures suggested by Goode and Hatt (1952) and by Leslie (1972).

RESEARCH DESIGN. The design for this aspect of the research was composed of two dependent variables captured in the scores on EDC and ILC scales; two explanatory independent variables treating publication; and four intervening variables.

Career publication productivity and current publication productivity were the two explanatory independent variables. Career publication productivity was defined as the unweighted total of all self-reported scholarly books, theoretical or research monographs and articles in refereed academic journals published since receipt of the Ph.D. divided by the number of years since the Ph.D. was awarded as of 1979 (professional age). Total career publication productivity was divided by the professional age in order to adjust the quantity of publications accumulated because of professional age. Four levels of career publication productivity were developed: High (1.4 publications per year and above); Medium-High (.640 to 1.399 publications per year); Medium Low (.330 to .639 publications per year; and Low (none to .329 publications per year).

Current publication productivity, which was the second independent variable, was operationalized as the unweighted total of all self-reported scholarly books, theoretical or research monographs, and articles in refereed academic journals published with the past three years preceding this inquiry. Four levels of current publication productivity were constructed: High (5 to 12 publications);

Medium-High (3 to 4 publications); Medium-Low (1 to 2 publications); and Low (no publications). Dependent Variables were measured by the scores attained from individual reports of performance in the Disciplinary domain (EDC) and in the Institutional domain (ILC).

Both of these "scale of Scales" measured of performance. These scale scores were operationalized for analysis as the sum total of the products of (a.) self-reported number of times each specific activity of each category of the over-all scale was conducted during the last three years multiplied by (b.) the median rating of the degree to which research training is used in the performance of that specific activity.

With respect to the four intervening variables: previous research has indicated assciations between research emphasis and publications and Academic Discipline (Biglan, 1973a, 1973b; and Smart and Elton, 1375); Quality of Department of Doctoral Training (Crane, 1965; Long, 1978; and Reskin, 1979); Time Devoted to Administrative Duties (Manis, 1951; Elduson, 1966; and Pelz and Andrews, 1966); and Professional Age (Pelz and Andrews, 1966; and Bayer and Dutton, 1978). Therefore, these four variables might also be related to levels of performance on both of the dependent measures of this study. Academic discipline--chemistry and psychology--was built into the design as an independent assigned variable or factor, while the remaining three intervening variables were treated as co-variates in this design.

DATA ANALYSIS: In the full pattern of analysis the basic hypotheses were cast in null form. Each hypothesis was examined against both aspects of the dependent variable, current as well as career publication. To assess the intervening variables they were entered as covariates in a comparison of publication and performance scale scores. Once the influence of the intervening factors was established then a simpler analysis of variance was used to assess

the relationship between publication levels, performance scale scores and discipline. For purposes of this paper, only one sequence of analysis will be reported.

Hypothesis One in null form states: There are no statistically significant differences between faculty of four levels of career publication productivity and performance on the scale of External Disciplinary - Colleague Activities (EDC scores).

The analysis of covariance run in a 4 x 2 ANCOVA revealed statistically non-significant relationships between all three covariates and scores on the EDC scale. For Time Spent in Administration the values were F=1.689, p=<.20; (df = 1.151 for all) for Quality of Doctoral Department, F=0.05, p=<.82; for Professional Age F-0.374, p=<.54. Since the associations were not statistically significant they were eliminated from subsequent analysis.

For the analysis of variance the respondents were distributed in the following pattern:

Table 1. Cell Sizes for ANOVA Comparing Performance Scale Scores and Career Publications by Discipline (Hypotehses One and Two).

Academic Discipline	Career Publication Productivity				Total
	Low	Med-Low	Med-High	High	
Chemistry	35	23	21	11	90
Psychology	40	19	17	20	96
	75	42	38	31	186

The Bartlett Test of Homogeneity of Variances (Kirk, 1969) among the eight groups of this design was conducted prior to the Anlaysis of Variance. This test was conducted for two reasons: 1) heterogeneous variances were suspected; and 2) the unequal number of cases per group. The Bartlett Test revealed a Chi

Square value of 12.865 (7df, p<.10). Thus, it was concluded that the variances were homogeneous and that a conventional 4 x 2 ANOVA could be performed by test Hypotheses One.

When the EDC scale scores were entered in the cells shown in Table 1 a 4 x 2 ANOVA was computed. The results are summarized in Table 2. We note that the F-ratio of 14.458 significant at the .005 level of confidence warrants the rejection of the null statement. A high level of career publications is associated with those activities more closely related research doctoral training as measured by the EDC scale.

Table 2. ANOVA Summary Testing Hypothesis One - "No Relation Between Career Publication and EDC Scale Scores."

Source of Variation	Sum of Squares	Mean Square	df	F-Ratio	Prob. of F
Career Public Prod.	394130.63	131376.88	3	14.46	0.000
Academic Discipline	7293.52	7293.52	1	0.803	0.372
Career Public Prod. x Academic Disc.	19498.98	6499.66	3	0.715	0.544
Error	1617449.00	9086.79	178		

What of the effects of discipline? The summary in Table 2 sustains a conclusion that observed variation in scores on the EDC scale between academic chemists and academic psychologist was due to chance. The F-ratio of 0.803 (p<.372) provides corroboration.

The rejection of the null form of Hypotheses One does not provide immediate support for the Hypotheses One in its positive form. While the significant F-ratio does indicate that variation among the four levels of career publication productivity was not due to chance, it does not specify how the four levels differ from each other. A post-hoc multi-group comparison procedure was selected

the Boneferroni "t" statistic (Miller, 1966). Use of this procedure sets an upper limit of a probability of .0004 to rejecting a true null hypothesis of the set of six group comparisons made.

Table 3. Post-Hoc Group Comparisons of Career Publication Productivity Levels on EDC Scale Performance.

A. Group Means for Levels of Career Publication Productivity on EDC Scale

Group	N	Mean EDC Scale
Low	75	210.60
Medium-Low	42	250.10
Medium-High	38	266.13
High	31	343.54
	186	

B. Group Comparisons and Corresponding Confidence Intervals Constructed for Group Mean Differences by Bonferroni "t" Method

Group Comparisons	Mean Difference	Confidence Intervals
Med-Low (-) Low	39.45	-38.41 to 117.31
Med-High (-) Low	55.53	-22.33 to 133.39
High (-) Low	132.94	55.08 to 210.80*
Med-High (-) Med-Low	16.08	-61.77 to 93.94
High (-) Med-Low	93.49	15.63 to 171.35*
High (-) Med-High	77.41	-00.448 to 155.27*

*Differences between Group Means are statistically significant @ .05 level of confidence

The confidence intervals (Table 3) constructed for the differences in mean scores between high and low career publication productivity and between high and medium-low publication productivity did not contain zero thus the prospect of chance differences between these two sets of comparisons was rejected. Put in different words, faculty of high career publication productivity exhibited a higher level of performance on EDC scale than did faculty of not only low, but also medium-low career publication productivity. Thus, support for research Hypotheses One was provided by this pattern of results.

The pattern of analysis displayed in detail above consisting of the 4 x 2 ANCOVA, 4 x 2 ANOVA, and post hoc computation of the Boneferroni "t" statistic was continued with other aspects of the general hypothesis. When current publications rather than career output were used as the independent variable a similar confirmation of the hypothesis that high publication is related in a regular and significant way to disciplinary-external-colleague activities (EDC scores) appeared.

Hypothesis Two embodied the expectation that low publishers, either career or current, would score higher on the institutional-local-community activities, (ILC score). The null form--no difference between high and low publishers--was the subject of the tests first using career publication levels then using current publication level. The distinction between high and low publishers did not come through in a statistically significant form and the null hypothesis was sustained. Data are displayed in Tables 4 (a)(b) and we note the F-ratio = 2.406, $p \leq .07$ (df=3.178) when career publication was used, F-ratio = 1.33, $p \leq .27$ (df-3.178) when current publications was used. Subsequent development of the Boneferroni "t" statistic confirmed the unexpected finding by demonstrating that high publishers outperform low publishers in the institutional-local-community domain ($t_{105} = 2.48$, $p \leq .02$). Thus a contention that non-publishers are busy using their doctoral training in ways other than publication is opened to question.

Table 4(a). ANOVA Summary Testing Hypothesis Two = No Relation Between Career Publication and ILC Scale Scores

Source of Variation	Sum of Squares	Mean Square	df	F-Ratio	Prob. of F
Current Publ. Prod.	39599.02	13199.67	3	2.406	0.069
Academic Discipline	3841.94	3841.94	1	0.700	0.404
Career Publ. Prod. x Academic Discipline	12282.95	4094.32	3	9.746	0.526
Error	976575.69	5486.38	178		

Table 4(b). ANOVA Summary Testing Hypothesis Two = No Relation Between Current Publication and ILC Scale Scores

Source of Variation	Sum of Squares	Mean Square	df	F-Ratio	Prob. of F
Current Publ. Prod.	22339.74	7445.58	3	1.327	0.267
Academic Discipline	3759.58	3759.58	1	0.670	0.414
Current Publ. Prod. x Academic Discipline	7237.87	2412.62	3	0.430	0.732
Error	998880.06	5611.68	178		

CONCLUSION: An approach to the study of faculty professional behavior when organized around the degree to which doctoral research training is used, that is to say, a process rather than a product orientation, yields four interesting conclusions.

1. When "scholarly performance" is defined to include those activities which make use of doctoral research training a considerable scope of professional effort is encompassed. Such a definition overcomes some of the narrowness and ambiguity that attends the use of research output in the form of publications as a measure of performance.

2. This range of activities can be differentiated and scaled with considerable reliability by experienced academics to reflect the degree to which doctoral training is used.

3. A statistically significant separation of these weighted activity items can be made into one "domain" that reflects disciplinary-external-colleague orientations and a second domain reflecting institutional-local-community concentrations of effort.

4. When these domains were converted into scale scores (EDC) (ILC) and tested against the most widely used output measure, level of publications, some unusual findings appeared. High publishers generated high EDC scores as expected.

But they also achieved high ILC scores reflecting more activity in the institutional-local-community setting than low publishers.

Of course any interpretation of these findings must be qualified by the limited scope of a study which involved one kind of institution, two disciplines, and a relatively small number of participants. Within that setting however the validity of results have been well tested.

A first reaction to these results may be that publications are, after all, a pretty good measure and, in a sense, they are. But then again they are not. Publications do not measure only research output. They appear to capture evidence of general energy output, a characteristic that explains their durability. More important is what they omit and thereby obscure. Significant areas of professional behavior that are process oriented require the skill and intellect of research training but yield no easily measured output results. If these aspects of professional behavior were analyzed and described more accurately then publications, which no one proposes to discard, might be brought into perspective in the eyes of faculty committees, administrators, and, most important of all, the public.

Median Ratings and Frequency Distribution of Ratings of Degree of Utilization of Doctoral Research Training for 71 Activities

Disciplinary Domain	Median Rating	Frequency Distribution of Ratings 0	1	2	3	4	5	6	7	8	9	10	Semi-Interquartile Range
Extramural Lectures													
1. Public lectures on current disciplinary topics at a local community college	4.0	0	0	4	0	2	0	1	1	0	2	0	2.63
2. Public Lectures on current disciplinary topics at another college or university	5.8	0	0	1	1	0	2	3	0	1	0	2	1.75
Ancillary Disciplinary Writings													
1. Critical book reviews published in newsletters of professional associations	8.5	0	0	0	0	0	0	1	3	1	4	1	1.06
2. Critical book reviews published in academic or professional journals	8.8	0	0	0	0	0	1	0	1	2	3	3	.96
3. Edited books published	4.2*	Imputed Rating											NA
4. A research proposal written to a private foundation	5.3*	Imputed Rating											NA
5. A research proposal written to state or federal agencies	5.8*	Imputed Rating											NA
Disciplinary Readings													
1. Articles in popular press	4.2*	Imputed Rating											NA

	Median Rating	Frequency Distribution of Ratings 0	1	2	3	4	5	6	7	8	9	10	Semi-Interquartile Range
2. Books of the popular press	4.2*	Imputed Rating											NA
3. Abstracts of scholarly work as a discipline	5.9*	Imputed Rating											NA
4. Academic or professional journals in a discipline	9.7	0	0	0	0	1	0	0	2	0	1	6	1.67
5. Scholarly books in a discipline	9.0	0	0	0	1	0	1	0	2	0	2	4	1.94
6. Academic or professional journals in discipline other than one's own	9.0*	Imputed Rating											NA
Informal Communications With Colleagues													
1. Visits to universities to discuss research with colleagues	8.5	0	0	0	0	1	0	0	3	1	1	4	1.94
2. Telephone conversations with colleagues to discuss their research	9.2	0	0	2	0	0	0	0	1	1	3	4	.94
3. Discuss research with colleagues at one's institution	5.9*	Imputed Rating											NA
4. Informal conversations about research with colleagues at meeting of professional associations	9.3*	Imputed Rating											NA
5. Letters written to colleagues asking questions about their research	9.5	0	0	0	1	0	1	0	0	2	1	5	1.88
6. Manuscripts circulated for criticisms by colleagues	9.0*	Imputed Rating											NA

	Median Rating	Frequency Distribution of Ratings 0	1	2	3	4	5	6	7	8	9	10	Semi-Interquartile Range
7. Letters written which offer criticisms of journal articles to the authors of such articles	8.5	0	1	0	1	0	0	0	0	3	1	4	2.78
8. Letters written which offer criticisms of scholarly books to the authors of such books	8.5	0	0	1	1	0	0	1	0	2	1	4	2.44
Disciplinary Association Activities													
1. Service on an association committee	8.8*	Imputed Rating											NA
2. Service as an association officer	9.3*	Imputed Rating											NA
3. Edited the proceedings of meetings	8.1*	Imputed Rating											NA
4. Service as a chairperson of a meeting session	5.8	0	0	1	1	2	1	1	1	0	2	1	1.86
5. Service as a critic of a meeting session	8.1	0	0	0	0	0	0	2	2	2	0	4	1.49
6. Conducted a workshop at a meeting	9.8*	Imputed Rating											NA
7. Conducted a seminar at a meeting	9.8*	Imputed Rating											NA
8. Conducted a roundtable discussion at a meeting	9.8*	Imputed Rating											NA
9. Presented a paper at a meeting	8.9	0	0	0	0	0	0	2	2	1	5	2	1.13

	Median Rating	Frequency Distribution of Ratings 0	1	2	3	4	5	6	7	8	9	10	Semi-Interquartile Range
Institutional-Public Domain													
Public Talks and Lectures on Current Disciplinary Topics													
1. On a local radio station	2.5	1	3	1	1	1	2	1	0	0	0	0	1.88
2. On a local TV station	2.5	0	4	1	1	1	2	1	0	0	0	0	1.81
3. For a local women's service organization	2.0	2	2	2	2	1	0	1	0	0	0	0	1.25
4. For a local men's service organization	1.8	1	3	3	1	1	0	1	0	0	0	0	1.00
5. For a local business association	2.5	1	3	1	0	2	1	1	0	1	0	0	2.00
6. For a local professional (non-academic) association	3.5	1	2	1	1	1	2	1	0	1	0	0	2.00
7. For a group of college alumni	3.0	1	3	0	2	2	1	1	0	0	0	0	1.63
8. For a local high school class	2.5	0	4	1	3	1	0	1	0	0	0	0	1.10
9. For a high school assembly	2.0	0	4	2	2	1	0	1	0	0	0	0	1.06
Institutional-Departmental Activities													
1. Service on an admissions committee	3.2*	Imputed Rating											NA
2. Service on a curriculum committee	5.2*	Imputed Rating											NA
3. Advisement on the preparation of course evaluation instruments	6.5	0	0	0	1	2	1	1	2	1	2	0	1.88
4. A study indicated to help solve a departmental problem	5.5	0	1	0	2	0	2	0	1	2	1	1	1.63

	Median Rating	Frequency Distribution of Ratings 0	1	2	3	4	5	6	7	8	9	10	Semi-Interquartile Range
5. A studies conducted to help formulate departmental policy	5.5	0	1	0	2	0	2	0	2	1	0	2	2.50
6. Self-studies conducted for one's department	5.5	0	1	0	2	0	2	0	2	2	1	0	2.38
7. Assistance in institutional preparation for accreditation review	3.5	1	1	1	2	3	1	1	0	0	0	0	1.17
8. Studies conducted to help formulate institutional policy	8.5	0	1	0	1	0	1	0	0	2	3	2	2.42
Course Content and Activities													
1. Construction of annotated bibliographies for course reference	5.0	0	0	2	2	0	2	1	1	1	1	0	2.13
2. Assignment of research activities	8.8*	Imputed Rating											NA
3. Assignment of current scholarly books as required course reading	5.5	0	1	0	2	1	1	2	0	2	1	0	2.00
4. Assignment of current journal articles as required reading	4.5	0	1	1	2	1	1	1	0	1	2	0	2.38
5. Suggestion of current scholarly books as supplemental course reading	5.5	0	1	0	2	1	1	2	0	2	1	0	2.00
6. Suggestion of current journal articles as supplemental course readings	5.5	0	1	0	2	1	1	2	0	2	1	0	2.00
7. Lectures on topics from current journal articles not covered in course readings	5.0	0	1	0	2	0	4	1	1	1	0	0	2.00
8. Lectures on topics from current scholarly books not covered in course readings	5.8	0	0	0	3	0	1	3	1	0	2	0	1.50

	Median Rating	Frequency Distribution of Ratings 0	1	2	3	4	5	6	7	8	9	10	Semi-Interquartile Range
9. Collection of information for course evaluation	4.0	1	0	2	1	2	0	1	1	1	1	0	2.50
Public Service Activities													
1. Seminars conducted for lay persons on current disciplinary topics	5.5	0	1	0	1	1	2	1	1	2	1	0	1.88
2. Studies conducted for local women's organizations	6.3	0	0	0	1	1	0	4	0	1	3	0	1.92
3. Studies conducted for local men's organization	6.0	1	1	0	1	1	0	2	0	2	2	0	2.75
4. Studies conducted for local professional (non-academic) associations	6.8	0	0	0	1	0	0	3	3	0	3	0	1.42
5. Studies conducted for local governmental agencies	6.5	0	0	0	1	0	1	3	1	0	3	1	1.42
6. Studies conducted to help solve community problems	6.5	0	0	0	1	0	1	3	1	2	2	0	1.29
7. Studies conducted to help solve county problems	6.3	0	0	0	1	0	1	4	0	2	2	0	1.06
8. Studies conducted for state governmental agencies	6.5	0	0	0	0	1	1	3	1	0	3	1	1.42
Public Disciplinary Writings													
1. Articles on current disciplinary topics published in local newspapers	4.5	0	1	0	3	1	1	2	1	0	1	0	1.88

	Median Rating	Frequency Distribution of Ratings 0	1	2	3	4	5	6	7	8	9	10	Semi-Interquartile Range
2. Articles on current disciplinary topics published in a college or university alumni publication	5.2	1	0	0	0	2	3	1	1	1	1	0	1.75
3. Articles on current disciplinary topics published in a National magazine of the popular press	6.2	0	1	0	1	1	0	3	0	1	1	2	2.50
4. Critical book reviews published in the popular press	5.9*	Imputed Rating											NA
5. Textbooks published	9.3*	Imputed Rating											NA
6. Books published reporting research to the lay reader	9.8*	Imputed Rating											NA
7. Grant proposals written for the development of new academic programs	5.2	1	2	0	0	0	3	0	2	1	0	1	2.88

*Item suggested by one or more judges; value of rating is imputed

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